



1250 PETERSON DRIVE WHEELING ILLINOIS 60090-6454 • PHONE 708-537-6400

August 1, 1995

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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Office of Secretary
FCC
2000 M Street N.W. Unit 480
Washington, DC 20554

Enclosed are replies for ET Docket No. 95-19. They were originally sent on June 23, 1995 to your office but were not included in the list of commenters. I believe the reason for this is that on the first page (see enclosed) the original subject matter stated "ET Docket No. 95-14" and we realized that was the wrong docket number. I hope it is not too late to get our comments in for this matter.

Thank you.

Respectfully Yours,

Donald L. Sweeney
President and
Sr. EMC Engineer

DLS/mm

Enclosures

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List A B C D E



1250 PETERSON DRIVE, WHEELING, ILLINOIS 60090-6454 • PHONE 708-537-6400

TO: FCC COMMISSION

SUBJECT: NOTICE OF PROPOSED RULE
ET DOCKET NO. 95-19
FCC 95-46
VERIFICATION OF CLASS B PRODUCTS

We agree that a burden exists which delays the manufacture of digital devices from getting to market in a timely manner. We also feel that the spirit and even the letter of the law requiring compliance to specific levels, is at risk by relaxing the procedure without controls.

1. We whole heartedly support the Declaration of Conformity (DOC) as described in the Docket. From experience already gained from the European union's DOC, we see much more respect is given from manufacturers who are being required to sign a DOC ensuring compliance than the present FCC part 15 verification process in the U.S. We have seen an unusual level of concern by manufacturers feeling that the new European Union (EU) requirement for a DOC must be met and met properly.

We feel this is due to:

A. the signature being required by a person accepting criminal and financial responsibility for compliance.

B. perceivably, whether real or not, dire consequences if fraud is found.

I know of many companies, especially those who were verified under FCC and thus ignored part 15 now busy complying to the new EU requirements. One party, in 10 years, only came to D.L.S. to solve problems involving field failures of their equipment. When they discovered they could not market in the EU without the CE marking, they developed a strategy and are presently testing their entire product line. I find it interesting that it took 1.5 years to get their first DOC signed by an officer of their company. That tells us it means something very significant to the signer.

We believe the DOC or a copy must accompany each product. This will prevent it from being generated (after the fact) upon request by the FCC.

2. A label should accompany the product. This label must be different from the Class A verified unless a DOC is required with verified products also. We feel a DOC with Class A would make sense and increase compliance of Class A products.

3. A DOC accompanying both Class A & B products would increase compliance and should not add any additional burden since the testing has "already been done".

4. D.L.S. is a NVLAP accredited laboratory. We feel NVLAP should be required by "all" laboratories doing testing for hire. This accreditation has helped D.L.S. gain many of the more "professional" companies as they have a higher degree of confidence in the work performed by a NVLAP accredited laboratory then those who are just FCC registered.

We feel NVLAP gives:

- a. A uniform criteria to be accredited under.
 - b. Better control on the laboratories since during onsite audits both the quality assurance manual as well as the testing procedures are examined.
 - c. During our audit, discussions were held with the personnel performing the testing. We feel this type of audit gives D.L.S. customers the confidence that they are dealing with a qualified laboratory and D.L.S.'s employees an opportunity to demonstrate their expertise.
 - d. over the years we at D.L.S. have witnessed what we feel is proof that NVLAP has meaning over non NVLAP labs.
 1. One lab owner (not a NVLAP Lab) was overheard saying he only did FCC Class A and B verified testing. He didn't want to deal with "those people" at the FCC. One would conclude this meant he didn't want his work audited.
5. We have great concern if nothing replaces the FCC registration for test sites. We feel some form of registration is necessary. Either keep and expand it at the FCC or turn it over to an organization like the NIST's NVLAP program.

We feel all labs, even Class A verified, should be registered. Over the years, Don Sweeney of D.L.S. has seen the following examples of verified FCC A test sites:

- A. Manufacturer verified Class A equipment. Their test site had a wooden structure built over the EUT area. In the Midwest, some structure is needed. As Don was shown the EUT building he noticed, "overhead lights," one in each corner of the building. These were pointed out with pride as necessary for late night work often done here. This person obviously had no concept of vertical site attenuation.
- B. Another manufacturer had Don review their "test site" to ensure conformity to ANSI C63.4. During the visit, several problems were observed which showed total lack of controls by the FCC of verified test sites.
 1. Only one single line LISN network was being used. In order to allow testing of both sides of the power line, a wire switching arrangement with multiple wires passing up and down a 6 foot bundle was used to "test" both sides of the power line with a single line LISN.
 2. At the same facility, when open field testing was demonstrated and witnessed, the operator did the low frequency testing from 30 to 200 MHz in the vertical polarization. After completing the tests, he began to put the antenna away. Don asked, "what do you do next?" He answered, "I'm done." Don asked, "what about horizontal polarization?" The answer was, "we discovered a long time ago that we don't have a problem in the horizontal polarization." The next question was, "what do you do next?" The answer again was, "I'm done." The next question was, "what about 200 to 1000 MHz?" The answer was classic. "Oh, we discovered a long time ago we don't have emissions that high!" They now are using 50 MHz clocks in wooden cabinets but a long time ago they discovered they didn't have a problem!

We believe someone must protect the customers from labs which might be doing similar testing as described above which never have been required to ever register their sites with the FCC. The EM environment must be protected by "well meaning manufacturers and not so well meaning test labs who think they know how to do EMC testing."

6. There are many decisions made during testing which require a high degree of understanding of EMC and its consequences. This understanding could best be handled by a technical expert system. Perhaps in conjunction with the verification procedure for personal computers and the requirements of test labs to be NVLAP approved, a step further should be made where these labs be given special authority such as in the EU where many labs have been given competent body status after meeting specific criteria. These labs and the individuals would be responsible for defining the testing procedures as well as special situations which in the past required the FCC to be involved. This would give an increased probability of compliance. If this procedure is used, it is important, as they have found in the EU, that these competent bodies be in touch with each other and have a common goal and approach.

We support the following:

- A. "All" test labs should be NVLAP accredited or as a minimum, some similar accreditation.
- B. "All" manufacturers (Both Class A & B) must be required to register with the commission. Registration does not cover poor testing techniques but it would certainly can catch:
 - 1. poor site attenuation as, both vertical & horizontal would be required to be filed.
 - 2. improper equipment as a list of equipment would be required.
 - 3. perhaps a written discussion or a copy of a test report describing how testing is performed should also be required.

The above would assure manufacturers using laboratories, that they are dealing with labs that know how to test and the commission that there is a reasonable probability of proper testing by manufacturer who registered these sites.

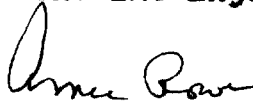
We look forward to the proposed streamlining of the procedure but only if reasonable control are implemented:

- A. DOC signed and delivered with each piece of equipment. (Copy not an original)
- B. Test labs meeting NVLAP accreditation.
- C. Manufacturers filing some information with the commission, if they are doing their own compliance testing.
- D. Technical expert competent body system setup.
- E. FCC enforcement of the rule and regulations.

We the undersigned support the above position:



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President and
SR. EMC Engineer



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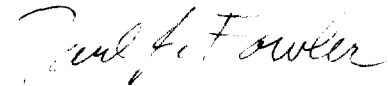
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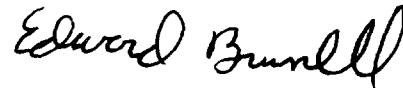
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OFFICE OF SECRETARY

TO: FCC COMMISSION

SUBJECT: NOTICE OF PROPOSED RULE [REDACTED]
ET DOCKET NO. 95-19
FCC 95-46
AUTHORIZATION OF MODULAR PERSONAL COMPUTERS

I find it difficult to conceive of a procedure which will ensure compliance using the modular computer approach. The understanding of many assemblers is so limited that they often don't even understand how the computer works, yet alone the EMC aspects of a complex system.

Assuming it can be done, I believe some of the following must be considered:

1. Testing of the cpu boards as a stand alone with a limit, a certain maximum above the assembly limit, say 10 dB.
2. The cabinet must then be shown to demonstrate an amount of shielding over the frequency range of its intended uses with at least the amount of attenuation the board exceeds the limit plus a 5 dB margin: this proof of attenuation can be demonstrated using a standard oscillator and circuit board. e.g. a given length & width, thus loop area. Logic family: e.g. HC, etc. and clock frequency would need to be demonstrated.
3. The CPU board must then be shown to comply in a cabinet whose minimum attenuation would be required for future cabinets used for final assemblies. Here cables would be connected and any of the fixes, e.g. fingers on keyboard, etc. would need to be used in the final assembly.
4. Power supplies have always presented a path for energy to leave a PC system. When power supplies are designed separately from a system, energy will radiate from the power cords unless precautions are designed in. Some means would need to be demonstrated which would guarantee compliance of the power supply when installed in a PC. Possibly the same way as 2 above.

Perhaps in conjunction with the verification procedure for personal computers and the requirements of test labs to be NVLAP approved, a step further should be made where these labs be given special authority such as in the EU where many labs have been given competent body status after meeting specific criteria. These labs and the individuals would be responsible for defining the testing procedures and establishing the general rules for how computers can be assembled in the future as well as special situations which in the past would require the FCC to be involved. This would increase the probabilities of compliance. If this procedure is used, it is important as they have found in the EU, that these competent bodies be in touch with each other and have a common goal and approach.

In summary, I believe the modular approach is going to be difficult at best. The only possibility of its success is:

1. test cpu boards.
2. test cabinet and power supplies for attenuation.
3. test complete assemblies at least once and then have this all overviewed by a "competent body established through NVLAP" or reviewed by the FCC.

Respectfully Yours,

Donald L. Sweeney
President and
Sr. EMC Engineer EMC 01209 NE
D.L.S. Electronic Systems

We the undersign agree and support the above recommendations:

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